

## SEQUENCE LISTING

<110> Lee, Se-Jin  
McPherron, Alexandra C.

<120> GROWTH DIFFERENTIATION FACTOR RECEPTORS,  
AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME

<130> JHU1470-2

<150> 09/485,046

<151> 2000-01-31

<150> PCT/US98/15598

<151> 1998-07-28

<150> 60/054,461

<151> 1997-08-01

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Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Val Ile Arg Gln Leu	
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Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His	
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Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu	
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Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala	
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Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu		
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Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val		
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Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly		
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Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Lys		
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Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys		
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Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala		
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Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr		
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 Leu Gln Met Tyr Val Tyr Ile Tyr Leu Phe Met Leu Ile Ala Ala Gly  
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 Pro Val Asp Leu Asn Glu Gly Ser Glu Arg Glu Glu Asn Val Glu Lys  
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 gag ggg ctg tgt aat gca tgt gcg tgg aga caa aac acg agg tac tcc 259  
 Glu Gly Leu Cys Asn Ala Cys Ala Trp Arg Gln Asn Thr Arg Tyr Ser  
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Thr Ala Pro Asn Ile Ser Lys Asp Ala Ile Arg Gln Leu Leu Pro Arg	
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Ala Pro Pro Leu Arg Glu Leu Ile Asp Gln Tyr Asp Val Gln Arg Asp	
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Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His Ala Thr Thr	
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Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu Met Gln Ala	
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Asp Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser Lys Ile Gln	
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Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Lys Val Thr Asp	
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Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys Asp Glu His	
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Cys Gly Cys Ser  
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&lt;211&gt; 376

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 4

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 Thr Arg Tyr Ser Arg Ile Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys  
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 85 90 95  
 Val Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr  
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 305 310 315 320  
 Lys Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser  
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 Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu  
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48

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96

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Asn	Val	Glu	Lys	Glu	Gly	Leu	Cys	Asn	Ala	Cys	Ala	Trp	Arg	Gln	Asn		
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aca	agg	tac	tcc	aga	ata	gaa	gcc	ata	aaa	att	caa	atc	ctc	agt	aaa		192
Thr	Arg	Tyr	Ser	Arg	Ile	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys		
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ctc	cgc	ctg	gaa	aca	gcg	cct	aac	atc	agc	aaa	gat	gct	ata	aga	caa		240
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Val	Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr		
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cac	gct	acc	acg	gaa	aca	atc	att	acc	atg	cct	acc	gag	tct	gac	ttt		384
His	Ala	Thr	Thr	Glu	Thr	Ile	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Phe		
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Leu	Met	Gln	Ala	Asp	Gly	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser		
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Leu	Arg	Ala	Val	Lys	Thr	Pro	Thr	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg		
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Leu	Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser		
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Val	Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu		
	210					215					220						
ggc	att	gaa	atc	aaa	gct	ttg	gat	gag	aat	ggg	cat	gat	ctt	gct	gta		720
Gly	Ile	Glu	Ile	Lys	Ala	Leu	Asp	Glu	Asn	Gly	His	Asp	Leu	Ala	Val		
	225				230					235					240		
acc	ttc	cca	gga	cca	gga	gaa	gat	ggg	ctg	aat	ccc	ttt	tta	gaa	gtc		768
Thr	Phe	Pro	Gly	Pro	Gly	Glu	Asp	Gly	Leu	Asn	Pro	Phe	Leu	Glu	Val		
			245					250					255				
aaa	gta	aca	gac	aca	ccc	aag	agg	tcc	cgg	aga	gac	ttt	ggg	ctt	gac		816



Lys Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp  
 260 265 270

tgc gat gaa cac tcc acg gaa tcg cgg tgc tgt cgc tac ccc ctc acg 864  
 Cys Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr  
 275 280 285

gtc gat ttc gaa gcc ttt gga tgg gac tgg att att gca ccc aaa aga 912  
 Val Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg  
 290 295 300

tat aag gct aat tac tgc tct gga gag tgt gaa ttt gtg ttc tta caa 960  
 Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln  
 305 310 315 320

aaa tat ccg cat act cat ctt gtg cac caa gca aac ccc aga ggc tcg 1008  
 Lys Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser  
 325 330 335

gca ggc cct tgc tgc acg cca aca aaa atg tct ccc att aat atg cta 1056  
 Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu  
 340 345 350

tat ttt aat ggc aaa gaa caa ata ata tat ggg aaa att cca gcc atg 1104  
 Tyr Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met  
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gta gta gac cgg tgt ggg tgc tcg tga 1131  
 Val Val Asp Arg Cys Gly Cys Ser  
 370 375

<210> 6

<211> 376

<212> PRT

<213> Rattus norvegicus

<400> 6

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 20 25 30  
 Asn Val Glu Lys Glu Gly Leu Cys Asn Ala Cys Ala Trp Arg Gln Asn  
 35 40 45  
 Thr Arg Tyr Ser Arg Ile Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys  
 50 55 60  
 Leu Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Ala Ile Arg Gln  
 65 70 75 80  
 Leu Leu Pro Arg Ala Pro Pro Leu Arg Glu Leu Ile Asp Gln Tyr Asp  
 85 90 95  
 Val Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr  
 100 105 110  
 His Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe  
 115 120 125  
 Leu Met Gln Ala Asp Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser  
 130 135 140  
 Ser Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr  
 145 150 155 160  
 Leu Arg Ala Val Lys Thr Pro Thr Thr Val Phe Val Gln Ile Leu Arg  
 165 170 175

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Leu Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser
      180      185      190
Leu Lys Leu Asp Met Ser Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp
      195      200      205
Val Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu
      210      215      220
Gly Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val
      225      230      235      240
Thr Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val
      245      250      255
Lys Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp
      260      265      270
Cys Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr
      275      280      285
Val Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg
      290      295      300
Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln
      305      310      315      320
Lys Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser
      325      330      335
Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu
      340      345      350
Tyr Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met
      355      360      365
Val Val Asp Arg Cys Gly Cys Ser
      370      375

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&lt;210&gt; 7

&lt;211&gt; 1128

&lt;212&gt; DNA

&lt;213&gt; Gallus gallus

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)...(1125)

&lt;400&gt; 7

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atg caa aag ctg gca gtc tat gtt tat att tac ctg ttc atg cag atc      48
Met Gln Lys Leu Ala Val Tyr Val Tyr Ile Tyr Leu Phe Met Gln Ile
  1              5              10              15

gcg gtt gat ccg gtg gct ctg gat ggc agt agt cag ccc aca gag aac      96
Ala Val Asp Pro Val Ala Leu Asp Gly Ser Ser Gln Pro Thr Glu Asn
      20              25              30

gct gaa aaa gac gga ctg tgc aat gct tgt acg tgg aga cag aat aca      144
Ala Glu Lys Asp Gly Leu Cys Asn Ala Cys Thr Trp Arg Gln Asn Thr
      35              40              45

aaa tcc tcc aga ata gaa gcc ata aaa att caa atc ctc agc aaa ctg      192
Lys Ser Ser Arg Ile Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu
      50              55              60

cgc ctg gaa caa gca cct aac att agc agg gac gtt att aag cag ctt      240
Arg Leu Glu Gln Ala Pro Asn Ile Ser Arg Asp Val Ile Lys Gln Leu
      65              70              75              80

tta ccc aaa gct cct cca ctg cag gaa ctg att gat cag tat gat gtc      288
Leu Pro Lys Ala Pro Pro Leu Gln Glu Leu Ile Asp Gln Tyr Asp Val
      85              90              95

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cag agg gac gac agt agc gat ggc tct ttg gaa gac gat gac tat cat	336
Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His	
100 105 110	
gcc aca acc gag acg att atc aca atg cct acg gag tct gat ttt ctt	384
Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu	
115 120 125	
gta caa atg gag gga aaa cca aaa tgt tgc ttc ttt aag ttt agc tct	432
Val Gln Met Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser	
130 135 140	
aaa ata caa tat aac aaa gta gta aag gca caa tta tgg ata tac ttg	480
Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu	
145 150 155 160	
agg caa gtc caa aaa cct aca acg gtg ttt gtg cag atc ctg aga ctc	528
Arg Gln Val Gln Lys Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu	
165 170 175	
att aag ccc atg aaa gac ggt aca aga tat act gga att cga tct ttg	576
Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu	
180 185 190	
aaa ctt gac atg aac cca ggc act ggt atc tgg cag agt att gat gtg	624
Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val	
195 200 205	
aag aca gtg ctg caa aat tgg ctc aaa cag cct gaa tcc aat tta ggc	672
Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly	
210 215 220	
atc gaa ata aaa gct ttt gat gag act gga cga gat ctt gct gtc aca	720
Ile Glu Ile Lys Ala Phe Asp Glu Thr Gly Arg Asp Leu Ala Val Thr	
225 230 235 240	
ttc cca gga cca gga gaa gat gga ttg aac cca ttt tta gag gtc aga	768
Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Arg	
245 250 255	
gtt aca gac aca ccg aaa cgg tcc cgc aga gat ttt ggc ctt gac tgt	816
Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys	
260 265 270	
gat gag cac tca acg gaa tcc cga tgt tgt cgc tac ccg ctg aca gtg	864
Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val	
275 280 285	
gat ttc gaa gct ttt gga tgg gac tgg att ata gca cct aaa aga tac	912
Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr	
290 295 300	
aaa gcc aat tac tgc tcc gga gaa tgc gaa ttt gtg ttt cta cag aaa	960
Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys	
305 310 315 320	
tac ccg cac act cac ctg gta cac caa gca aat ccc aga ggc tca gca	1008
Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala	
325 330 335	

ggc cct tgc tgc aca ccc acc aag atg tcc cct ata aac atg ctg tat 1056  
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr  
                   340                                  345                                  350

ttc aat gga aaa gaa caa ata ata tat gga aag ata cca gcc atg gtt 1104  
 Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val  
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gta gat cgt tgc ggg tgc tca tga 1128  
 Val Asp Arg Cys Gly Cys Ser  
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<210> 8

<211> 374

<212> PRT

<213> Gallus gallus

<400> 8

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                                   20                                  25                                  30  
 Glu Lys Asp Gly Leu Cys Asn Ala Cys Thr Trp Arg Gln Asn Thr Lys  
                                   35                                  40                                  45  
 Ser Ser Arg Ile Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu Arg  
                                   50                                  55                                  60  
 Leu Glu Gln Ala Pro Asn Ile Ser Arg Asp Val Ile Lys Gln Leu Leu  
                                   65                                  70                                  75                                  80  
 Pro Lys Ala Pro Pro Leu Gln Glu Leu Ile Asp Gln Tyr Asp Val Gln  
                                   85                                  90                                  95  
 Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His Ala  
                                   100                                  105                                  110  
 Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu Val  
                                   115                                  120                                  125  
 Gln Met Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser Lys  
                                   130                                  135                                  140  
 Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu Arg  
                                   145                                  150                                  155                                  160  
 Gln Val Gln Lys Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu Ile  
                                   165                                  170                                  175  
 Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu Lys  
                                   180                                  185                                  190  
 Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val Lys  
                                   195                                  200                                  205  
 Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly Ile  
                                   210                                  215                                  220  
 Glu Ile Lys Ala Phe Asp Glu Thr Gly Arg Asp Leu Ala Val Thr Phe  
                                   225                                  230                                  235                                  240  
 Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Arg Val  
                                   245                                  250                                  255  
 Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys Asp  
                                   260                                  265                                  270  
 Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val Asp  
                                   275                                  280                                  285  
 Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr Lys  
                                   290                                  295                                  300  
 Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys Tyr  
                                   305                                  310                                  315                                  320

Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala Gly  
                           325                          330                          335  
 Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr Phe  
                           340                          345                          350  
 Asn Gly Lys Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val Val  
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<210> 9  
 <211> 1128  
 <212> DNA  
 <213> Baboon

<220>  
 <221> CDS  
 <222> (1)...(1125)

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 gtt gct ggt cca gtg gat cta aat gag aac agt gag caa aaa gaa aat 96  
 Val Ala Gly Pro Val Asp Leu Asn Glu Asn Ser Glu Gln Lys Glu Asn  
                           20                          25                          30  
 gtg gaa aaa gag ggg ctg tgt aat gca tgt act tgg aga caa aac act 144  
 Val Glu Lys Glu Gly Leu Cys Asn Ala Cys Thr Trp Arg Gln Asn Thr  
                           35                          40                          45  
 aaa tct tca aga ata gaa gcc att aaa ata caa atc ctc agt aaa ctt 192  
 Lys Ser Ser Arg Ile Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu  
                           50                          55                          60  
 cgt ctg gaa aca gct cct aac atc agc aaa gat gct ata aga caa ctt 240  
 Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Ala Ile Arg Gln Leu  
   65                          70                          75                          80  
 tta ccc aaa gcg cct cca ctc cgg gaa ctg att gat cag tat gat gtc 288  
 Leu Pro Lys Ala Pro Pro Leu Arg Glu Leu Ile Asp Gln Tyr Asp Val  
                           85                          90                          95  
 cag agg gat gac agc agc gat ggc tct ttg gaa gat gac gat tat cac 336  
 Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His  
                           100                          105                          110  
 gct aca acg gaa aca atc att acc atg cct aca gag tct gat ttt tta 384  
 Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu  
                           115                          120                          125  
 atg caa gtg gat gga aaa ccc aaa tgt tgc ttc ttt aaa ttt agc tct 432  
 Met Gln Val Asp Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser  
                           130                          135                          140  
 aaa ata caa tac aat aaa gtg gta aag gcc caa cta tgg ata tat ttg 480  
 Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu  
   145                          150                          155                          160  
 aga ccc gtc gag act cct aca aca gtg ttt gtg caa atc ctg aga ctc 528

Arg	Pro	Val	Glu	Thr	Pro	Thr	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg	Leu		
				165					170					175			
atc	aaa	cct	atg	aaa	gac	ggc	aca	agg	tat	act	gga	atc	cga	tct	ctg	576	
Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser	Leu		
			180					185					190				
aaa	ctt	gac	atg	aac	cca	ggc	act	ggc	att	tgg	cag	agc	att	gat	gtg	624	
Lys	Leu	Asp	Met	Asn	Pro	Gly	Thr	Gly	Ile	Trp	Gln	Ser	Ile	Asp	Val		
			195				200					205					
aag	aca	gtg	ttg	caa	aat	tgg	ctc	aaa	caa	cct	gaa	tcc	aac	tta	ggc	672	
Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu	Gly		
	210					215					220						
att	gaa	ata	aaa	gct	tta	gat	gag	aat	ggc	cat	gat	ctt	gct	gta	acc	720	
Ile	Glu	Ile	Lys	Ala	Leu	Asp	Glu	Asn	Gly	His	Asp	Leu	Ala	Val	Thr		
	225				230					235				240			
ttc	cca	gga	cca	gga	gaa	gat	ggg	ctg	aat	ccc	ttt	tta	gag	gtc	aag	768	
Phe	Pro	Gly	Pro	Gly	Glu	Asp	Gly	Leu	Asn	Pro	Phe	Leu	Glu	Val	Lys		
				245					250					255			
gta	aca	gac	aca	ccc	aaa	aga	tcc	aga	agg	gat	ttt	ggc	ctt	gac	tgt	816	
Val	Thr	Asp	Thr	Pro	Lys	Arg	Ser	Arg	Arg	Asp	Phe	Gly	Leu	Asp	Cys		
			260					265					270				
gat	gag	cac	tca	aca	gaa	tcg	cga	tgc	tgt	cgt	tac	cct	cta	act	gtg	864	
Asp	Glu	His	Ser	Thr	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val		
		275					280					285					
gat	ttt	gaa	gct	ctt	gga	tgg	gat	tgg	att	atc	gct	cct	aaa	aga	tat	912	
Asp	Phe	Glu	Ala	Leu	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg	Tyr		
	290					295					300						
aaag	gcc	aat	tac	tgc	tct	gga	gag	tgt	gaa	ttt	gta	ttt	tta	caa	aaa	960	
Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Glu	Cys	Glu	Phe	Val	Phe	Leu	Gln	Lys		
	305				310					315					320		
tat	cct	cat	act	cat	ctg	gta	cac	caa	gca	aac	ccc	aga	ggc	tca	gca	1008	
Tyr	Pro	His	Thr	His	Leu	Val	His	Gln	Ala	Asn	Pro	Arg	Gly	Ser	Ala		
				325					330					335			
ggc	cct	tgc	tgt	act	ccc	aca	aag	atg	tct	cca	att	aat	atg	cta	tat	1056	
Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu	Tyr		
			340					345					350				
ttt	aat	ggc	aaa	gaa	caa	ata	ata	tat	ggg	aaa	att	cca	gcc	atg	gta	1104	
Phe	Asn	Gly	Lys	Glu	Gln	Ile	Ile	Tyr	Gly	Lys	Ile	Pro	Ala	Met	Val		
		355				360						365					
gta	gac	cgc	tgc	ggg	tgc	tca	tga									1128	
Val	Asp	Arg	Cys	Gly	Cys	Ser											
	370				375												

<210> 10  
 <211> 375  
 <212> PRT  
 <213> Baboon

&lt;400&gt; 10

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Val Glu Lys Glu Gly Leu Cys Asn Ala Cys Thr Trp Arg Gln Asn Thr
 35          40          45
Lys Ser Ser Arg Ile Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu
 50          55          60
Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Ala Ile Arg Gln Leu
 65          70          75          80
Leu Pro Lys Ala Pro Pro Leu Arg Glu Leu Ile Asp Gln Tyr Asp Val
 85          90          95
Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His
100          105          110
Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu
115          120          125
Met Gln Val Asp Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser
130          135          140
Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu
145          150          155          160
Arg Pro Val Glu Thr Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu
165          170          175
Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu
180          185          190
Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val
195          200          205
Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly
210          215          220
Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val Thr
225          230          235          240
Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Lys
245          250          255
Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys
260          265          270
Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val
275          280          285
Asp Phe Glu Ala Leu Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr
290          295          300
Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys
305          310          315          320
Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala
325          330          335
Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr
340          345          350
Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val
355          360          365
Val Asp Arg Cys Gly Cys Ser
370          375

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&lt;210&gt; 11

&lt;211&gt; 1128

&lt;212&gt; DNA

&lt;213&gt; Bovine

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1) ... (1125)

&lt;400&gt; 11

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1 5 10 15	
gtt gct ggc cca gtg gat ctg aat gag aac agc gag cag aag gaa aat	96
Val Ala Gly Pro Val Asp Leu Asn Glu Asn Ser Glu Gln Lys Glu Asn	
20 25 30	
gtg gaa aaa gag ggg ctg tgt aat gca tgt ttg tgg agg gaa aac act	144
Val Glu Lys Glu Gly Leu Cys Asn Ala Cys Leu Trp Arg Glu Asn Thr	
35 40 45	
aca tcg tca aga cta gaa gcc ata aaa atc caa atc ctc agt aaa ctt	192
Thr Ser Ser Arg Leu Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu	
50 55 60	
cgc ctg gaa aca gct cct aac atc agc aaa gat gct atc aga caa ctt	240
Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Ala Ile Arg Gln Leu	
65 70 75 80	
ttg ccc aag gct cct cca ctc ctg gaa ctg att gat cag ttc gat gtc	288
Leu Pro Lys Ala Pro Pro Leu Leu Glu Leu Ile Asp Gln Phe Asp Val	
85 90 95	
cag aga gat gcc agc agt gac ggc tcc ttg gaa gac gat gac tac cac	336
Gln Arg Asp Ala Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His	
100 105 110	
gcc agg acg gaa acg gtc att acc atg ccc acg gag tct gat ctt cta	384
Ala Arg Thr Glu Thr Val Ile Thr Met Pro Thr Glu Ser Asp Leu Leu	
115 120 125	
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Thr Gln Val Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser	
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Lys Ile Gln Tyr Asn Lys Leu Val Lys Ala Gln Leu Trp Ile Tyr Leu	
145 150 155 160	
agg cct gtc aag act cct gcg aca gtg ttt gtg caa atc ctg aga ctc	528
Arg Pro Val Lys Thr Pro Ala Thr Val Phe Val Gln Ile Leu Arg Leu	
165 170 175	
atc aaa ccc atg aaa gac ggt aca agg tat act gga atc cga tct ctg	576
Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu	
180 185 190	
aaa ctt gac atg aac cca ggc act ggt att tgg cag agc att gat gtg	624
Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val	
195 200 205	
aag aca gtg ttg cag aac tgg ctc aaa caa cct gaa tcc aac tta ggc	672
Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly	
210 215 220	
att gaa atc aaa gct tta gat gag aat ggc cat gat ctt gct gta acc	720
Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val Thr	
225 230 235 240	



<400> 12															
Met	Gln	Lys	Leu	Gln	Ile	Ser	Val	Tyr	Ile	Tyr	Leu	Phe	Met	Leu	Ile
1				5					10					15	
Val	Ala	Gly	Pro	Val	Asp	Leu	Asn	Glu	Asn	Ser	Glu	Gln	Lys	Glu	Asn
			20					25					30		
Val	Glu	Lys	Glu	Gly	Leu	Cys	Asn	Ala	Cys	Leu	Trp	Arg	Glu	Asn	Thr
		35					40					45			
Thr	Ser	Ser	Arg	Leu	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys	Leu
	50					55					60				
Arg	Leu	Glu	Thr	Ala	Pro	Asn	Ile	Ser	Lys	Asp	Ala	Ile	Arg	Gln	Leu
65					70					75				80	
Leu	Pro	Lys	Ala	Pro	Pro	Leu	Leu	Glu	Leu	Ile	Asp	Gln	Phe	Asp	Val
				85					90					95	
Gln	Arg	Asp	Ala	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	His
			100					105					110		
Ala	Arg	Thr	Glu	Thr	Val	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Leu	Leu
		115					120						125		

Thr Gln Val Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser  
 130 135 140  
 Lys Ile Gln Tyr Asn Lys Leu Val Lys Ala Gln Leu Trp Ile Tyr Leu  
 145 150 155 160  
 Arg Pro Val Lys Thr Pro Ala Thr Val Phe Val Gln Ile Leu Arg Leu  
 165 170 175  
 Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu  
 180 185 190  
 Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val  
 195 200 205  
 Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly  
 210 215 220  
 Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val Thr  
 225 230 235 240  
 Phe Pro Glu Pro Gly Glu Asp Gly Leu Thr Pro Phe Leu Glu Val Lys  
 245 250 255  
 Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys  
 260 265 270  
 Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val  
 275 280 285  
 Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr  
 290 295 300  
 Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys  
 305 310 315 320  
 Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala  
 325 330 335  
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr  
 340 345 350  
 Phe Asn Gly Glu Gly Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val  
 355 360 365  
 Val Asp Arg Cys Gly Cys Ser  
 370 375

&lt;210&gt; 13

&lt;211&gt; 1128

&lt;212&gt; DNA

&lt;213&gt; Porcine

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)... (1125)

&lt;400&gt; 13

atg caa aaa ctg caa atc tat gtt tat att tac ctg ttt atg ctg att	48
Met Gln Lys Leu Gln Ile Tyr Val Tyr Ile Tyr Leu Phe Met Leu Ile	
1 5 10 15	
gtt gct ggt ccc gtg gat ctg aat gag aac agc gag caa aag gaa aat	96
Val Ala Gly Pro Val Asp Leu Asn Glu Asn Ser Glu Gln Lys Glu Asn	
20 25 30	
gtg gaa aaa gag ggg ctg tgt aat gca tgt atg tgg aga caa aac act	144
Val Glu Lys Glu Gly Leu Cys Asn Ala Cys Met Trp Arg Gln Asn Thr	
35 40 45	
aaa tct tca aga cta gaa gcc ata aaa att caa atc ctc agt aaa ctt	192
Lys Ser Ser Arg Leu Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu	
50 55 60	
cgc ctg gaa aca gct cct aac att agc aaa gat gct ata aga caa ctt	240

Arg	Leu	Glu	Thr	Ala	Pro	Asn	Ile	Ser	Lys	Asp	Ala	Ile	Arg	Gln	Leu	
65					70					75					80	
ttg	ccc	aaa	gct	cct	cca	ctc	cgg	gaa	ctg	att	gat	cag	tac	gat	gtc	288
Leu	Pro	Lys	Ala	Pro	Pro	Leu	Arg	Glu	Leu	Ile	Asp	Gln	Tyr	Asp	Val	
			85						90					95		
cag	aga	gat	gac	agc	agt	gat	ggc	tcc	ttg	gaa	gat	gat	gat	tat	cac	336
Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	His	
			100					105						110		
gct	acg	acg	gaa	acg	atc	att	acc	atg	cct	aca	gag	tct	gat	ctt	cta	384
Ala	Thr	Thr	Glu	Thr	Ile	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Leu	Leu	
			115					120						125		
atg	caa	gtg	gaa	gga	aaa	ccc	aaa	tgc	tgc	ttc	ttt	aaa	ttt	agc	tct	432
Met	Gln	Val	Glu	Gly	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser	Ser	
			130				135							140		
aaa	ata	caa	tac	aat	aaa	gta	gta	aag	gcc	caa	ctg	tgg	ata	tat	ctg	480
Lys	Ile	Gln	Tyr	Asn	Lys	Val	Val	Lys	Ala	Gln	Leu	Trp	Ile	Tyr	Leu	
145					150					155					160	
aga	ccc	gtc	aag	act	cct	aca	aca	gtg	ttt	gtg	caa	atc	ctg	aga	ctc	528
Arg	Pro	Val	Lys	Thr	Pro	Thr	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg	Leu	
				165					170					175		
atc	aaa	ccc	atg	aaa	gac	ggc	aca	agg	tat	act	gga	atc	cga	tct	ctg	576
Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser	Leu	
			180					185						190		
aaa	ctt	gac	atg	aac	cca	ggc	act	ggc	att	tgg	cag	agc	att	gat	gtg	624
Lys	Leu	Asp	Met	Asn	Pro	Gly	Thr	Gly	Ile	Trp	Gln	Ser	Ile	Asp	Val	
			195				200						205			
aag	aca	gtg	ttg	caa	aat	tgg	ctc	aaa	caa	cct	gaa	tcc	aac	tta	ggc	672
Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu	Gly	
			210				215						220			
att	gaa	atc	aaa	gct	tta	gat	gag	aat	ggc	cat	gat	ctt	gct	gta	acc	720
Ile	Glu	Ile	Lys	Ala	Leu	Asp	Glu	Asn	Gly	His	Asp	Leu	Ala	Val	Thr	
225					230					235					240	
ttc	cca	gga	cca	gga	gaa	gat	ggg	ctg	aat	ccc	ttt	tta	gaa	gtc	aag	768
Phe	Pro	Gly	Pro	Gly	Glu	Asp	Gly	Leu	Asn	Pro	Phe	Leu	Glu	Val	Lys	
				245					250					255		
gta	aca	gac	aca	cca	aaa	aga	tcc	agg	aga	gat	ttt	gga	ctc	gac	tgt	816
Val	Thr	Asp	Thr	Pro	Lys	Arg	Ser	Arg	Arg	Asp	Phe	Gly	Leu	Asp	Cys	
			260					265						270		
gat	gag	cac	tca	aca	gaa	tct	cga	tgc	tgt	cgt	tac	cct	cta	act	gtg	864
Asp	Glu	His	Ser	Thr	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val	
			275					280						285		
gat	ttt	gaa	gct	ttt	gga	tgg	gac	tgg	att	att	gca	ccc	aaa	aga	tat	912
Asp	Phe	Glu	Ala	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg	Tyr	
			290				295					300				
aag	gcc	aat	tac	tgc	tct	gga	gag	tgt	gaa	ttt	gta	ttt	tta	caa	aaa	960

Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys  
 305 310 315 320

tac cct cac act cat ctt gtg cac caa gca aac ccc aga ggt tca gca 1008  
 Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala  
 325 330 335

ggc ccc tgc tgt act ccc aca aag atg tct cca atc aat atg cta tat 1056  
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr  
 340 345 350

ttt aat ggc aaa gaa caa ata ata tat ggg aaa att cca gcc atg gta 1104  
 Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val  
 355 360 365

gta gat cgc tgt ggg tgc tca tga 1128  
 Val Asp Arg Cys Gly Cys Ser  
 370 375

<210> 14

<211> 375

<212> PRT

<213> Porcine

<400> 14

Met Gln Lys Leu Gln Ile Tyr Val Tyr Ile Tyr Leu Phe Met Leu Ile  
 1 5 10 15  
 Val Ala Gly Pro Val Asp Leu Asn Glu Asn Ser Glu Gln Lys Glu Asn  
 20 25 30  
 Val Glu Lys Glu Gly Leu Cys Asn Ala Cys Met Trp Arg Gln Asn Thr  
 35 40 45  
 Lys Ser Ser Arg Leu Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu  
 50 55 60  
 Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Ala Ile Arg Gln Leu  
 65 70 75 80  
 Leu Pro Lys Ala Pro Pro Leu Arg Glu Leu Ile Asp Gln Tyr Asp Val  
 85 90 95  
 Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His  
 100 105 110  
 Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Leu Leu  
 115 120 125  
 Met Gln Val Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser  
 130 135 140  
 Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu  
 145 150 155 160  
 Arg Pro Val Lys Thr Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu  
 165 170 175  
 Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu  
 180 185 190  
 Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val  
 195 200 205  
 Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly  
 210 215 220  
 Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val Thr  
 225 230 235 240  
 Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Lys  
 245 250 255  
 Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys  
 260 265 270

Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val  
 275 280 285  
 Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr  
 290 295 300  
 Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys  
 305 310 315 320  
 Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala  
 325 330 335  
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr  
 340 345 350  
 Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val  
 355 360 365  
 Val Asp Arg Cys Gly Cys Ser  
 370 375

&lt;210&gt; 15

&lt;211&gt; 1128

&lt;212&gt; DNA

&lt;213&gt; Ovine

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)... (1125)

&lt;400&gt; 15

atg caa aaa ctg caa atc ttt gtt tat att tac cta ttt atg ctg ctt 48  
 Met Gln Lys Leu Gln Ile Phe Val Tyr Ile Tyr Leu Phe Met Leu Leu  
 1 5 10 15  
 gtt gct ggc cca gtg gat ctg aat gag aac agc gag cag aag gaa aat 96  
 Val Ala Gly Pro Val Asp Leu Asn Glu Asn Ser Glu Gln Lys Glu Asn  
 20 25 30  
 gtg gaa aaa aag ggg ctg tgt aat gca tgc ttg tgg aga caa aac aat 144  
 Val Glu Lys Lys Gly Leu Cys Asn Ala Cys Leu Trp Arg Gln Asn Asn  
 35 40 45  
 aaa tcc tca aga cta gaa gcc ata aaa atc caa atc ctc agt aag ctt 192  
 Lys Ser Ser Arg Leu Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu  
 50 55 60  
 cgc ctg gaa aca gct cct aac atc agc aaa gat gct ata aga caa ctt 240  
 Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Ala Ile Arg Gln Leu  
 65 70 75 80  
 ttg ccc aag gct cct cca ctc cgg gaa ctg att gat cag tac gat gtc 288  
 Leu Pro Lys Ala Pro Pro Leu Arg Glu Leu Ile Asp Gln Tyr Asp Val  
 85 90 95  
 cag aga gat gac agc agc gac ggc tcc ttg gaa gac gat gac tac cac 336  
 Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His  
 100 105 110  
 gtt acg acg gaa acg gtc att acc atg ccc acg gag tct gat ctt cta 384  
 Val Thr Thr Glu Thr Val Ile Thr Met Pro Thr Glu Ser Asp Leu Leu  
 115 120 125  
 gca gaa gtg caa gaa aaa ccc aaa tgt tgc ttc ttt aaa ttt agc tct 432  
 Ala Glu Val Gln Glu Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser  
 130 135 140

aag ata caa cac aat aaa gta gta aag gcc caa ctg tgg ata tat ctg Lys Ile Gln His Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu 145 150 155 160	480
aga cct gtc aag act cct aca aca gtg ttt gtg caa atc ctg aga ctc Arg Pro Val Lys Thr Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu 165 170 175	528
atc aaa ccc atg aaa gac ggt aca agg tat act gga atc cga tct ctg Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu 180 185 190	576
aaa ctt gac atg aac cca ggc act ggt att tgg cag agc att gat gtg Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val 195 200 205	624
aag aca gtg ttg caa aac tgg ctc aaa caa cct gaa tcc aac tta ggc Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly 210 215 220	672
att gaa atc aaa gct tta gat gag aat ggt cat gat ctt gct gta acc Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val Thr 225 230 235 240	720
ttc cca gaa cca gga gaa gaa gga ctg aat cct ttt tta gaa gtc aag Phe Pro Glu Pro Gly Glu Glu Gly Leu Asn Pro Phe Leu Glu Val Lys 245 250 255	768
gta aca gac aca cca aaa aga tct agg aga gat ttt ggg ctt gat tgt Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys 260 265 270	816
gat gag cac tcc aca gaa tct cga tgc tgt cgt tac cct cta act gtg Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val 275 280 285	864
gat ttt gaa gct ttt gga tgg gat tgg att att gca cct aaa aga tat Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr 290 295 300	912
aag gcc aat tac tgc tct gga gaa tgt gaa ttt tta ttt ttg caa aag Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Leu Phe Leu Gln Lys 305 310 315 320	960
tat cct cat acc cat ctt gtg cac caa gca aac ccc aaa ggt tca gcc Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Lys Gly Ser Ala 325 330 335	1008
ggc cct tgc tgt act cct aca aag atg tct cca att aat atg cta tat Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr 340 345 350	1056
ttt aat ggc aaa gaa caa ata ata tat ggg aag att cca ggc atg gta Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met Val 355 360 365	1104
gta gat cgc tgt ggg tgc tca tga Val Asp Arg Cys Gly Cys Ser 370 375	1128

<210> 16  
 <211> 375  
 <212> PRT  
 <213> Ovine

<400> 16

Met	Gln	Lys	Leu	Gln	Ile	Phe	Val	Tyr	Ile	Tyr	Leu	Phe	Met	Leu	Leu
1				5					10					15	
Val	Ala	Gly	Pro	Val	Asp	Leu	Asn	Glu	Asn	Ser	Glu	Gln	Lys	Glu	Asn
			20					25					30		
Val	Glu	Lys	Lys	Gly	Leu	Cys	Asn	Ala	Cys	Leu	Trp	Arg	Gln	Asn	Asn
		35					40					45			
Lys	Ser	Ser	Arg	Leu	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys	Leu
	50					55					60				
Arg	Leu	Glu	Thr	Ala	Pro	Asn	Ile	Ser	Lys	Asp	Ala	Ile	Arg	Gln	Leu
65					70					75					80
Leu	Pro	Lys	Ala	Pro	Pro	Leu	Arg	Glu	Leu	Ile	Asp	Gln	Tyr	Asp	Val
			85					90						95	
Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	His
			100					105					110		
Val	Thr	Thr	Glu	Thr	Val	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Leu	Leu
		115					120					125			
Ala	Glu	Val	Gln	Glu	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser	Ser
	130					135					140				
Lys	Ile	Gln	His	Asn	Lys	Val	Val	Lys	Ala	Gln	Leu	Trp	Ile	Tyr	Leu
145					150					155					160
Arg	Pro	Val	Lys	Thr	Pro	Thr	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg	Leu
			165					170						175	
Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser	Leu
		180						185					190		
Lys	Leu	Asp	Met	Asn	Pro	Gly	Thr	Gly	Ile	Trp	Gln	Ser	Ile	Asp	Val
	195						200					205			
Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu	Gly
	210					215					220				
Ile	Glu	Ile	Lys	Ala	Leu	Asp	Glu	Asn	Gly	His	Asp	Leu	Ala	Val	Thr
225					230					235					240
Phe	Pro	Glu	Pro	Gly	Glu	Glu	Gly	Leu	Asn	Pro	Phe	Leu	Glu	Val	Lys
			245					250						255	
Val	Thr	Asp	Thr	Pro	Lys	Arg	Ser	Arg	Arg	Asp	Phe	Gly	Leu	Asp	Cys
		260						265					270		
Asp	Glu	His	Ser	Thr	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val
	275						280					285			
Asp	Phe	Glu	Ala	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg	Tyr
	290					295					300				
Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Glu	Cys	Glu	Phe	Leu	Phe	Leu	Gln	Lys
305					310					315					320
Tyr	Pro	His	Thr	His	Leu	Val	His	Gln	Ala	Asn	Pro	Lys	Gly	Ser	Ala
			325						330					335	
Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu	Tyr
		340						345				350			
Phe	Asn	Gly	Lys	Glu	Gln	Ile	Ile	Tyr	Gly	Lys	Ile	Pro	Gly	Met	Val
	355						360					365			
Val	Asp	Arg	Cys	Gly	Cys	Ser									
	370					375									

<210> 17  
 <211> 1128  
 <212> DNA

&lt;213&gt; Meleagris gallopavo

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)...(1125)

&lt;400&gt; 17

atg	caa	aag	cta	gca	gtc	tat	gtt	tat	att	tac	ctg	ttc	atg	cag	att	48
Met	Gln	Lys	Leu	Ala	Val	Tyr	Val	Tyr	Ile	Tyr	Leu	Phe	Met	Gln	Ile	
1				5					10					15		

tta	gtt	cat	ccg	gtg	gct	ctt	gat	ggc	agt	agt	cag	ccc	aca	gag	aac	96
Leu	Val	His	Pro	Val	Ala	Leu	Asp	Gly	Ser	Ser	Gln	Pro	Thr	Glu	Asn	
			20					25					30			

gct	gaa	aaa	gac	gga	ctg	tgc	aat	gct	tgc	acg	tgg	aga	cag	aat	act	144
Ala	Glu	Lys	Asp	Gly	Leu	Cys	Asn	Ala	Cys	Thr	Trp	Arg	Gln	Asn	Thr	
		35					40					45				

aaa	tcc	tcc	aga	ata	gaa	gcc	ata	aaa	att	caa	atc	ctc	agc	aaa	ctg	192
Lys	Ser	Ser	Arg	Ile	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys	Leu	
	50					55					60					

cgc	ctg	gaa	caa	gca	cct	aac	att	agc	agg	gac	gtt	att	aaa	caa	ctt	240
Arg	Leu	Glu	Gln	Ala	Pro	Asn	Ile	Ser	Arg	Asp	Val	Ile	Lys	Gln	Leu	
65					70				75					80		

tta	ccc	aaa	gct	cct	ccg	ctg	cag	gaa	ctg	att	gat	cag	tat	gac	gtc	288
Leu	Pro	Lys	Ala	Pro	Pro	Leu	Gln	Glu	Leu	Ile	Asp	Gln	Tyr	Asp	Val	
				85					90					95		

cag	aga	gac	gac	agt	agc	gat	ggc	tct	ttg	gaa	gac	gat	gac	tat	cat	336
Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	His	
			100				105						110			

gcc	aca	acc	gaa	acg	att	atc	aca	atg	cct	acg	gag	tct	gat	ttt	ctt	384
Ala	Thr	Thr	Glu	Thr	Ile	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Phe	Leu	
		115					120					125				

gta	caa	atg	gag	gga	aaa	cca	aaa	tgt	tgc	ttc	ttt	aag	ttt	agc	tct	432
Val	Gln	Met	Glu	Gly	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser	Ser	
		130					135				140					

aaa	ata	caa	tat	aac	aaa	gta	gta	aag	gca	caa	tta	tgg	ata	tac	ttg	480
Lys	Ile	Gln	Tyr	Asn	Lys	Val	Val	Lys	Ala	Gln	Leu	Trp	Ile	Tyr	Leu	
145					150					155					160	

agg	caa	gtc	caa	aaa	cct	aca	acg	gtg	ttt	gtg	cag	atc	ctg	aga	ctc	528
Arg	Gln	Val	Gln	Lys	Pro	Thr	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg	Leu	
				165					170					175		

att	aaa	ccc	atg	aaa	gac	ggg	aca	aga	tat	act	gga	att	cga	tct	ttg	576
Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser	Leu	
			180					185						190		

aaa	ctt	gac	atg	aac	cca	ggc	act	ggg	atc	tgg	cag	agt	att	gat	gtg	624
Lys	Leu	Asp	Met	Asn	Pro	Gly	Thr	Gly	Ile	Trp	Gln	Ser	Ile	Asp	Val	
		195					200					205				

aag	aca	gtg	ttg	caa	aat	tgg	ctc	aaa	cag	cct	gaa	tcc	aat	tta	ggc	672
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Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly  
 210 215 220

atc gaa ata aaa gct ttt gat gag aat gga cga gat ctt gct gta aca 720  
 Ile Glu Ile Lys Ala Phe Asp Glu Asn Gly Arg Asp Leu Ala Val Thr  
 225 230 235 240

ttc cca gga cca ggt gaa gat gga ctg aac cca ttt tta gag gtc aga 768  
 Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Arg  
 245 250 255

gtt aca gac aca cca aaa cgg tcc cgc aga gat ttt ggc ctt gac tgc 816  
 Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys  
 260 265 270

gac gag cac tca acg gaa tct cga tgt tgt cgc tac ccg ctg aca gtg 864  
 Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val  
 275 280 285

gat ttt gaa gct ttt gga tgg gac tgg att ata gca cct aaa aga tac 912  
 Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr  
 290 295 300

aaa gcc aat tac tgc tct gga gaa tgt gaa ttc gta ttt cta cag aaa 960  
 Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys  
 305 310 315 320

tac ccg cac act cac ctg gta cac caa gca aat cca aga ggc tca gca 1008  
 Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala  
 325 330 335

ggc cct tgc tgc aca ccc acc aag atg tcc cct ata aac atg ctg tat 1056  
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr  
 340 345 350

ttc aat gga aaa gaa caa ata ata tat gga aag ata cca gcc atg gtt 1104  
 Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val  
 355 360 365

gta gat cgt tgc ggg tgc tca tga 1128  
 Val Asp Arg Cys Gly Cys Ser  
 370 375

<210> 18

<211> 375

<212> PRT

<213> Meleagris gallopavo

<400> 18

Met Gln Lys Leu Ala Val Tyr Val Tyr Ile Tyr Leu Phe Met Gln Ile  
 1 5 10 15  
 Leu Val His Pro Val Ala Leu Asp Gly Ser Ser Gln Pro Thr Glu Asn  
 20 25 30  
 Ala Glu Lys Asp Gly Leu Cys Asn Ala Cys Thr Trp Arg Gln Asn Thr  
 35 40 45  
 Lys Ser Ser Arg Ile Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu  
 50 55 60  
 Arg Leu Glu Gln Ala Pro Asn Ile Ser Arg Asp Val Ile Lys Gln Leu  
 65 70 75 80

Leu Pro Lys Ala Pro Pro Leu Gln Glu Leu Ile Asp Gln Tyr Asp Val  
                             85                            90                            95  
 Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His  
                             100                            105                            110  
 Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu  
                             115                            120                            125  
 Val Gln Met Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser  
                             130                            135                            140  
 Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu  
                             145                            150                            155                            160  
 Arg Gln Val Gln Lys Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu  
                             165                            170                            175  
 Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu  
                             180                            185                            190  
 Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val  
                             195                            200                            205  
 Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly  
                             210                            215                            220  
 Ile Glu Ile Lys Ala Phe Asp Glu Asn Gly Arg Asp Leu Ala Val Thr  
                             225                            230                            235                            240  
 Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Arg  
                             245                            250                            255  
 Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys  
                             260                            265                            270  
 Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val  
                             275                            280                            285  
 Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr  
                             290                            295                            300  
 Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys  
                             305                            310                            315                            320  
 Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala  
                             325                            330                            335  
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr  
                             340                            345                            350  
 Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val  
                             355                            360                            365  
 Val Asp Arg Cys Gly Cys Ser  
                             370                            375

&lt;210&gt; 19

&lt;211&gt; 1125

&lt;212&gt; DNA

&lt;213&gt; Danio rerio

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)... (1122)

&lt;400&gt; 19

atg	cat	ttt	aca	cag	gtt	tta	att	tct	cta	agt	gta	tta	att	gca	tgt	48
Met	His	Phe	Thr	Gln	Val	Leu	Ile	Ser	Leu	Ser	Val	Leu	Ile	Ala	Cys	
1				5					10					15		

ggt	cca	gtg	ggt	tat	gga	gat	ata	acg	gcg	cac	cag	cag	cct	tcc	aca	96
Gly	Pro	Val	Gly	Tyr	Gly	Asp	Ile	Thr	Ala	His	Gln	Gln	Pro	Ser	Thr	
		20						25					30			

gcc	acg	gag	gaa	agc	gag	ctg	tgt	tcc	aca	tgt	gag	ttc	aga	caa	cac	144
Ala	Thr	Glu	Ser	Glu	Leu	Cys	Ser	Thr	Cys	Glu	Phe	Arg	Gln	His		
		35				40						45				

agc aag ctg atg aga ctg cat gcc atc aag tcc caa att ctt agc aaa	192
Ser Lys Leu Met Arg Leu His Ala Ile Lys Ser Gln Ile Leu Ser Lys	
50 55 60	
ctc cga ctc aag cag gct cca aac atc agc cgg gac gtg gtc aag cag	240
Leu Arg Leu Lys Gln Ala Pro Asn Ile Ser Arg Asp Val Val Lys Gln	
65 70 75 80	
ctg tta ccc aaa gca ccg cct ttg caa caa ctt ctg gat cag tac gat	288
Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln Leu Leu Asp Gln Tyr Asp	
85 90 95	
gtt tta gga gat gac agt aag gat gga gct gtg gaa gag gac gat gaa	336
Val Leu Gly Asp Asp Ser Lys Asp Gly Ala Val Glu Glu Asp Asp Glu	
100 105 110	
cat gcc acc aca gag acc atc atg acc atg gcc aca gaa cct gac ccc	384
His Ala Thr Thr Glu Thr Ile Met Thr Met Ala Thr Glu Pro Asp Pro	
115 120 125	
att gtt caa gta gat cgg aaa ccg aag tgt tgc ttt ttc tcc ttc agt	432
Ile Val Gln Val Asp Arg Lys Pro Lys Cys Cys Phe Phe Ser Phe Ser	
130 135 140	
ccg aag atc caa gcg aac ccg atc gta aga gcg cag ctc tgg gtt cat	480
Pro Lys Ile Gln Ala Asn Arg Ile Val Arg Ala Gln Leu Trp Val His	
145 150 155 160	
ctg aga ccg gcg gag gag gcg acc acc gtc ttc tta cag ata tct cgg	528
Leu Arg Pro Ala Glu Glu Ala Thr Thr Val Phe Leu Gln Ile Ser Arg	
165 170 175	
ctg atg ccc gtt aag gac gga gga aga cac cga ata cga tcc ctg aaa	576
Leu Met Pro Val Lys Asp Gly Gly Arg His Arg Ile Arg Ser Leu Lys	
180 185 190	
tatc gac gtg aac gca gga gtc acg tct tgg cag agt ata gac gta aag	624
Ile Asp Val Asn Ala Gly Val Thr Ser Trp Gln Ser Ile Asp Val Lys	
195 200 205	
cag gtg ctc acg gtg tgg tta aaa caa ccg gag acc aac cga ggc atc	672
Gln Val Leu Thr Val Trp Leu Lys Gln Pro Glu Thr Asn Arg Gly Ile	
210 215 220	
gag att aac gca tat gac gcg aag gga aac gac ttg gcc gtc act tca	720
Glu Ile Asn Ala Tyr Asp Ala Lys Gly Asn Asp Leu Ala Val Thr Ser	
225 230 235 240	
acc gag act ggg gag gat gga ctg ctc ccc ttt atg gag gtg aaa ata	768
Thr Glu Thr Gly Glu Asp Gly Leu Leu Phe Met Glu Val Lys Ile	
245 250 255	
tca gag ggc cca aaa cga atc ccg agg gac tcc gga ctg gac tgc gat	816
Ser Glu Gly Pro Lys Arg Ile Arg Arg Asp Ser Gly Leu Asp Cys Asp	
260 265 270	
gag aat tcc tca gag tct cgc tgc tgc agg tac cct ctc act gtg gac	864
Glu Asn Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val Asp	
275 280 285	

ttc gag gac ttt ggc tgg gac tgg att att gct cca aaa cgc tat aag 912  
 Phe Glu Asp Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr Lys  
 290 295 300

gcg aat tac tgt tca gga gaa tgc gac tac atg tac ctg cag aag tat 960  
 Ala Asn Tyr Cys Ser Gly Glu Cys Asp Tyr Met Tyr Leu Gln Lys Tyr  
 305 310 315 320

ccc cac acc cat ctg gtg aac aag gcc agt ccg aga gga acg gct ggg 1008  
 Pro His Thr His Leu Val Asn Lys Ala Ser Pro Arg Gly Thr Ala Gly  
 325 330 335

ccc tgc tgc act ccc acc aag atg tct ccc atc aac atg ctt tac ttt 1056  
 Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr Phe  
 340 345 350

aac ggc aaa gag cag atc atc tac ggc aag atc cct tcg atg gta gta 1104  
 Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ser Met Val Val  
 355 360 365

gac cgc tgt ggc tgc tca tga 1125  
 Asp Arg Cys Gly Cys Ser  
 370

<210> 20

<211> 374

<212> PRT

<213> Danio rerio

<400> 20

Met His Phe Thr Gln Val Leu Ile Ser Leu Ser Val Leu Ile Ala Cys  
 1 5 10 15  
 Gly Pro Val Gly Tyr Gly Asp Ile Thr Ala His Gln Gln Pro Ser Thr  
 20 25 30  
 Ala Thr Glu Glu Ser Glu Leu Cys Ser Thr Cys Glu Phe Arg Gln His  
 35 40 45  
 Ser Lys Leu Met Arg Leu His Ala Ile Lys Ser Gln Ile Leu Ser Lys  
 50 55 60  
 Leu Arg Leu Lys Gln Ala Pro Asn Ile Ser Arg Asp Val Val Lys Gln  
 65 70 75 80  
 Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln Leu Leu Asp Gln Tyr Asp  
 85 90 95  
 Val Leu Gly Asp Asp Ser Lys Asp Gly Ala Val Glu Glu Asp Asp Glu  
 100 105 110  
 His Ala Thr Thr Glu Thr Ile Met Thr Met Ala Thr Glu Pro Asp Pro  
 115 120 125  
 Ile Val Gln Val Asp Arg Lys Pro Lys Cys Cys Phe Phe Ser Phe Ser  
 130 135 140  
 Pro Lys Ile Gln Ala Asn Arg Ile Val Arg Ala Gln Leu Trp Val His  
 145 150 155 160  
 Leu Arg Pro Ala Glu Glu Ala Thr Thr Val Phe Leu Gln Ile Ser Arg  
 165 170 175  
 Leu Met Pro Val Lys Asp Gly Gly Arg His Arg Ile Arg Ser Leu Lys  
 180 185 190  
 Ile Asp Val Asn Ala Gly Val Thr Ser Trp Gln Ser Ile Asp Val Lys  
 195 200 205  
 Gln Val Leu Thr Val Trp Leu Lys Gln Pro Glu Thr Asn Arg Gly Ile  
 210 215 220

Glu Ile Asn Ala Tyr Asp Ala Lys Gly Asn Asp Leu Ala Val Thr Ser  
 225 230 235 240  
 Thr Glu Thr Gly Glu Asp Gly Leu Leu Pro Phe Met Glu Val Lys Ile  
 245 250 255  
 Ser Glu Gly Pro Lys Arg Ile Arg Arg Asp Ser Gly Leu Asp Cys Asp  
 260 265 270  
 Glu Asn Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val Asp  
 275 280 285  
 Phe Glu Asp Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr Lys  
 290 295 300  
 Ala Asn Tyr Cys Ser Gly Glu Cys Asp Tyr Met Tyr Leu Gln Lys Tyr  
 305 310 315 320  
 Pro His Thr His Leu Val Asn Lys Ala Ser Pro Arg Gly Thr Ala Gly  
 325 330 335  
 Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr Phe  
 340 345 350  
 Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ser Met Val Val  
 355 360 365  
 Asp Arg Cys Gly Cys Ser  
 370

<210> 21

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> proteolytic cleavage site

<221> VARIANT

<222> (0)...(0)

<223> Xaa = Any Amino Acid

<400> 21

Arg Xaa Xaa Arg

1

<210> 22

<211> 4

<212> PRT

<213> Eukaryotes

<220>

<221> SITE

<222> (0)...(0)

<223> proteolytic processing site

<400> 22

Arg Ser Arg Arg

1

<210> 23

<211> 4

<212> PRT

<213> Eukaryotes

<220>

<221> SITE

<222> (0)...(0)

<223> proteolytic processing site

<400> 23  
Arg Ile Arg Arg  
1

<210> 24  
<211> 1393  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (54)...(1274)  
<223> GDF-11

<400> 24  
ccgcgggaact ccggcggtccc cgccccccag tcctccctcc cctccctcc agc atg 56  
Met  
1  
gtg ctc gcg gcc ccg ctg ctg ctg ggc ttc ctg ctc ctc gcc ctg gag 104  
Val Leu Ala Ala Pro Leu Leu Leu Gly Phe Leu Leu Leu Ala Leu Glu  
5 10 15  
ctg cgg ccc cgg ggg gag gcg gcc gag ggc ccc gcg gcg gcg gcg gcg 152  
Leu Arg Pro Arg Gly Glu Ala Ala Glu Gly Pro Ala Ala Ala Ala  
20 25 30  
gcg gcg gcg gcg gcg gca gcg gcg ggg gtc ggg ggg gag cgc tcc agc 200  
Ala Ala Ala Ala Ala Ala Ala Ala Gly Val Gly Gly Glu Arg Ser Ser  
35 40 45  
cgg cca gcc ccg tcc gtg gcg ccc gag ccg gac ggc tgc ccc gtg tgc 248  
Arg Pro Ala Pro Ser Val Ala Pro Glu Pro Asp Gly Cys Pro Val Cys  
50 55 60 65  
gtt tgg cgg cag cac agc cgc gag ctg cgc cta gag agc atc aag tcg 296  
Val Trp Arg Gln His Ser Arg Glu Leu Arg Leu Glu Ser Ile Lys Ser  
70 75 80  
cag atc ttg agc aaa ctg cgg ctc aag gag gcg ccc aac atc agc cgc 344  
Gln Ile Leu Ser Lys Leu Arg Leu Lys Glu Ala Pro Asn Ile Ser Arg  
85 90 95  
gag gtg gtg aag cag ctg ctg ccc aag gcg ccg ccg ctg cag cag atc 392  
Glu Val Val Lys Gln Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln Ile  
100 105 110  
ctg gac cta cac gac ttc cag ggc gac gcg ctg cag ccc gag gac ttc 440  
Leu Asp Leu His Asp Phe Gln Gly Asp Ala Leu Gln Pro Glu Asp Phe  
115 120 125  
ctg gag gag gac gag tac cac gcc acc acc gag acc gtc att agc atg 488  
Leu Glu Glu Asp Glu Tyr His Ala Thr Thr Glu Thr Val Ile Ser Met  
130 135 140 145  
gcc cag gag acg gac cca gca gta cag aca gat ggc agc cct ctc tgc 536  
Ala Gln Glu Thr Asp Pro Ala Val Gln Thr Asp Gly Ser Pro Leu Cys  
150 155 160

tgc cat ttt cac ttc agc ccc aag gtg atg ttc aca aag gta ctg aag Cys His Phe His Phe Ser Pro Lys Val Met Phe Thr Lys Val Leu Lys 165 170 175	584
gcc cag ctg tgg gtg tac cta cgg cct gta ccc cgc cca gcc aca gtc Ala Gln Leu Trp Val Tyr Leu Arg Pro Val Pro Arg Pro Ala Thr Val 180 185 190	632
tac ctg cag atc ttg cga cta aaa ccc cta act ggg gaa ggg acc gca Tyr Leu Gln Ile Leu Arg Leu Lys Pro Leu Thr Gly Glu Gly Thr Ala 195 200 205	680
ggg gga ggg ggc gga ggc cgg cgt cac atc cgt atc cgc tca ctg aag Gly Gly Gly Gly Gly Gly Arg Arg His Ile Arg Ile Arg Ser Leu Lys 210 215 220 225	728
att gag ctg cac tca cgc tca ggc cat tgg cag agc atc gac ttc aag Ile Glu Leu His Ser Arg Ser Gly His Trp Gln Ser Ile Asp Phe Lys 230 235 240	776
caa gtg cta cac agc tgg ttc cgc cag cca cag agc aac tgg ggc atc Gln Val Leu His Ser Trp Phe Arg Gln Pro Gln Ser Asn Trp Gly Ile 245 250 255	824
gag atc aac gcc ttt gat ccc agt ggc aca gac ctg gct gtc acc tcc Glu Ile Asn Ala Phe Asp Pro Ser Gly Thr Asp Leu Ala Val Thr Ser 260 265 270	872
ctg ggg ccg gga gcc gag ggg ctg cat cca ttc atg gag ctt cga gtc Leu Gly Pro Gly Ala Glu Gly Leu His Pro Phe Met Glu Leu Arg Val 275 280 285	920
cta gag aac aca aaa cgt tcc cgg cgg aac ctg ggt ctg gac tgc gac Leu Glu Asn Thr Lys Arg Ser Arg Arg Asn Leu Gly Leu Asp Cys Asp 290 295 300 305	968
gag cac tca agc gag tcc cgc tgc tgc cga tat ccc ctc aca gtg gac Glu His Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val Asp 310 315 320	1016
ttt gag gct ttc ggc tgg gac tgg atc atc gca cct aag cgc tac aag Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr Lys 325 330 335	1064
gcc aac tac tgc tcc ggc cag tgc gag tac atg ttc atg caa aaa tat Ala Asn Tyr Cys Ser Gly Gln Cys Glu Tyr Met Phe Met Gln Lys Tyr 340 345 350	1112
ccg cat acc cat ttg gtg cag cag gcc aat cca aga ggc tct gct ggg Pro His Thr His Leu Val Gln Gln Ala Asn Pro Arg Gly Ser Ala Gly 355 360 365	1160
ccc tgt tgt acc ccc acc aag atg tcc cca atc aac atg ctc tac ttc Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr Phe 370 375 380 385	1208
aat gac aag cag cag att atc tac ggc aag atc cct ggc atg gtg gtg Asn Asp Lys Gln Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met Val Val 390 395 400	1256

gat cgc tgt ggc tgc tct taagtgggtc actacaagct gctggagcaa  
 Asp Arg Cys Gly Cys Ser  
 405

1304

agacttggtg ggtgggtaac ttaacctctt cacagaggat aaaaaatgct tgtgagtatg 1364  
 acagaaggga ataaacaggc ttaaagggt 1393

&lt;210&gt; 25

&lt;211&gt; 407

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 25

Met	Val	Leu	Ala	Ala	Pro	Leu	Leu	Leu	Gly	Phe	Leu	Leu	Leu	Ala	Leu
1			5						10					15	
Glu	Leu	Arg	Pro	Arg	Gly	Glu	Ala	Ala	Glu	Gly	Pro	Ala	Ala	Ala	Ala
			20					25					30		
Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Gly	Val	Gly	Gly	Glu	Arg	Ser
			35				40					45			
Ser	Arg	Pro	Ala	Pro	Ser	Val	Ala	Pro	Glu	Pro	Asp	Gly	Cys	Pro	Val
			50			55					60				
Cys	Val	Trp	Arg	Gln	His	Ser	Arg	Glu	Leu	Arg	Leu	Glu	Ser	Ile	Lys
65					70					75				80	
Ser	Gln	Ile	Leu	Ser	Lys	Leu	Arg	Leu	Lys	Glu	Ala	Pro	Asn	Ile	Ser
				85					90					95	
Arg	Glu	Val	Val	Lys	Gln	Leu	Leu	Pro	Lys	Ala	Pro	Pro	Leu	Gln	Gln
			100					105						110	
Ile	Leu	Asp	Leu	His	Asp	Phe	Gln	Gly	Asp	Ala	Leu	Gln	Pro	Glu	Asp
			115				120						125		
Phe	Leu	Glu	Glu	Asp	Glu	Tyr	His	Ala	Thr	Thr	Glu	Thr	Val	Ile	Ser
			130			135					140				
Met	Ala	Gln	Glu	Thr	Asp	Pro	Ala	Val	Gln	Thr	Asp	Gly	Ser	Pro	Leu
145					150					155				160	
Cys	Cys	His	Phe	His	Phe	Ser	Pro	Lys	Val	Met	Phe	Thr	Lys	Val	Leu
				165					170					175	
Lys	Ala	Gln	Leu	Trp	Val	Tyr	Leu	Arg	Pro	Val	Pro	Arg	Pro	Ala	Thr
			180				185						190		
Val	Tyr	Leu	Gln	Ile	Leu	Arg	Leu	Lys	Pro	Leu	Thr	Gly	Glu	Gly	Thr
			195				200						205		
Ala	Gly	Gly	Gly	Gly	Gly	Gly	Arg	Arg	His	Ile	Arg	Ile	Arg	Ser	Leu
			210			215					220				
Lys	Ile	Glu	Leu	His	Ser	Arg	Ser	Gly	His	Trp	Gln	Ser	Ile	Asp	Phe
225					230					235				240	
Lys	Gln	Val	Leu	His	Ser	Trp	Phe	Arg	Gln	Pro	Gln	Ser	Asn	Trp	Gly
				245					250					255	
Ile	Glu	Ile	Asn	Ala	Phe	Asp	Pro	Ser	Gly	Thr	Asp	Leu	Ala	Val	Thr
			260				265						270		
Ser	Leu	Gly	Pro	Gly	Ala	Glu	Gly	Leu	His	Pro	Phe	Met	Glu	Leu	Arg
			275				280					285			
Val	Leu	Glu	Asn	Thr	Lys	Arg	Ser	Arg	Arg	Asn	Leu	Gly	Leu	Asp	Cys
			290			295					300				
Asp	Glu	His	Ser	Ser	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val
305					310					315				320	
Asp	Phe	Glu	Ala	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg	Tyr
				325					330					335	
Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Gln	Cys	Glu	Tyr	Met	Phe	Met	Gln	Lys
			340				345						350		
Tyr	Pro	His	Thr	His	Leu	Val	Gln	Gln	Ala	Asn	Pro	Arg	Gly	Ser	Ala
			355				360					365			
Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu	Tyr



<210> 27  
<211> 157

&lt;212&gt; PRT

&lt;213&gt; Salmon-1

&lt;400&gt; 27

Gln Pro Glu Thr Asn Trp Gly Ile Glu Ile Asn Ala Phe Asp Ser Lys  
 1 5 10 15  
 Gly Asn Asp Leu Ala Val Thr Ser Ala Glu Ala Gly Glu Gly Leu Gln  
 20 25 30  
 Pro Phe Met Glu Val Thr Ile Ser Glu Gly Pro Lys Arg Ser Arg Arg  
 35 40 45  
 Asp Ser Gly Leu Asp Cys Asp Glu Asn Ser Pro Glu Ser Arg Cys Cys  
 50 55 60  
 Arg Tyr Pro Leu Thr Val Asp Phe Glu Asp Phe Gly Trp Asp Trp Ile  
 65 70 75 80  
 Ile Ala Pro Lys Arg Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu  
 85 90 95  
 Tyr Met His Leu Gln Lys Tyr Pro His Thr His Leu Val Asn Lys Ala  
 100 105 110  
 Asn Pro Arg Gly Thr Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser  
 115 120 125  
 Pro Ile Asn Met Leu Tyr Phe Asn Arg Lys Glu Gln Ile Ile Tyr Gly  
 130 135 140  
 Lys Ile Pro Ser Met Val Val Asp Arg Cys Gly Cys Ser  
 145 150 155

&lt;210&gt; 28

&lt;211&gt; 412

&lt;212&gt; DNA

&lt;213&gt; Salmon-2

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (2)...(409)

&lt;400&gt; 28

g gtt acc tca act gaa gcc gga gaa gga ctg caa ccc ttc atg gag gtg 49  
 Val Thr Ser Thr Glu Ala Gly Glu Gly Leu Gln Pro Phe Met Glu Val 15  
 1 5 10 15  
 aag att tcg gag ggc ccg aag cgc tcc agg aga gat tcg ggc ctg gac 97  
 Lys Ile Ser Glu Gly Pro Lys Arg Ser Arg Arg Asp Ser Gly Leu Asp 30  
 20 25 30  
 tgt gat gag aac tcc ccc gag tcc cgc tgc tgc cgg tac ccc ctc acg 145  
 Cys Asp Glu Asn Ser Pro Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr 45  
 35 40 45  
 gtg gac ttt gaa gac ttt ggc tgg gac tgg att att gcc ccc aag cgc 193  
 Val Asp Phe Glu Asp Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg 60  
 50 55 60  
 tac aag gcc aac tac tgc tct ggt gag tgc gag tac atg cac ctg cag 241  
 Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Tyr Met His Leu Gln 80  
 65 70 75 80  
 aag tac ccc cac acc cac ctg gtg aac aag gct aac cct cgc ggc acc 289  
 Lys Tyr Pro His Thr His Leu Val Asn Lys Ala Asn Pro Arg Gly Thr 95  
 85 90 95  
 gcg ggg ccc tgc tgc acc ccc acc aag atg tcc ccc atc aac atg ctc 337

Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu  
 100 105 110

tac ttc aac cgc aaa gag cag atc atc tac ggc aag atc ccc tcc atg 385  
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 Val Asp Phe Glu Asp Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg  
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 Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Tyr Met His Leu Gln  
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 Lys Tyr Pro His Thr His Leu Val Asn Lys Ala Asn Pro Arg Gly Thr  
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